# AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

| 1. CONTRACT ID CODE | PAGE OF PAGES |
|---|---|
| J | 1 of 3 |

| 2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO.(If applicable) |
|---|---|---|---|
| 0004 | 26-Jan-2005 | W16ROE-4351-7224 | |

6. ISSUED BY CODE W912DS

USA ENGINEER DISTRICT, NEW YORK
ATTN:CENAN-CT ROOM 1843
26 FEDERAL PLAZA
NEW YORK NY 10278

7. ADMINISTERED BY (If other than item 6) CODE

OFC ENGR & SPEC PROJ TEAM
USACOE-NY DISTRICT ENGR MGT BR/OFC ENGR&S
NEW YORK NY 10278-0090

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

| | |
|---|---|
| X | 9A. AMENDMENT OF SOLICITATION NO. W912DS-05-B-0005 |
| X | 9B. DATED (SEE ITEM 11) 05-Jan-2005 |
| | 10A. MOD. OF CONTRACT/ORDER NO. |
| | 10B. DATED (SEE ITEM 13) |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this amendment is to make changes/clarifications to the Solicitation, Drawings, and Specifications for Military Police Station and Demolition of Buildings 132, 135 & 401, Fort Hamilton, Brooklyn, New York, and to respond to questions from prospective bidders. See Continuation Sheet.

Bid Opening Date remains unchanged for 10 Feb 2005 1400 hours local time.

Bidders must acknowledge receipt of this amendment by the date specified in the solicitation (or as amended) by one of the following methods: By signing Block 15 below, by separate letter, or by telegram. FAILURE TO ACKNOWLEDGE AMENDMENTS BY THE DATE AND TIME SPECIFIED MAY RESULT IN REJECTIONS OF YOUR BID IN ACCORDANCE WITH THE LATE BID, LATE MODIFICATION OF BIDS, OR LATE WITHDRAWAL OF BIDS (FAR 14.304)

All other Terms and Conditions remain the same.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL: | |
|---|---|---|---|
| 15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer) | 16C. DATE SIGNED 26-Jan-2005 |

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

**SUMMARY OF CHANGES**

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:
SCOPE
Amendment No. 4 for Solicitation No. W912DS-05-B-0005
Military Police Station and Demolition Buildings 132, 135 & 401, Fort Hamilton, NY

Scope of Work: This amendment is issued for the following reasons

Revise Drawings
Add a new drawing
Add two new specifications
Revise building number
Clarify elevator data
Answers to questions from contractor

**Drawings**:
The following drawings have been revised:
A-101, A-102,
S-101, S-102, S-103, S-104, S-106, S-701, S-705
E-104, E-504
P-100
M-100, M-101, M-102, M-103, M-600, M-601
XD-001

a. New: A-506 (missing from original set of drawings)

**The following are responses to bidders' questions**:

b. Question: Please refer to Section 10430. I am unable to find the exterior signs and the metal letters described in this section. Although amendment 1 has been published, the missing form 1442 apparently has not been included.

Response: Contractor shall provide a manufacturer and the manufacturer shall comply to specification requirements. Government regulations do not permit recommendation of manufacturers. SF 1442 forms are issued in Amendment No. 2.

c. Questions: I am writing to you to enquire what method you are using to protect the elevator shaft from smoke migration. (As required for all buildings by IBC 2000 and CFR's)
Response: We will modify elevator shaft by eliminating the louver. There will be no other further action taken.

c. Question: Pre-Bid Approval Request Square D TVSS TAG
Response: We do not accept this request. All material, and equipment will be reviewed for approval as " Shop Drawing" review during construction.

The required capacity and speed for the elevator in paragraph 1.4.1 of Section 14240 HYDRAULIC ELEVATORS are revised to "2000 pounds" and "100 fpm", respectively.

**ANY AND ALL REFERENCES TO BUILDING 123 IN THE SOLICITATION SHALL BE CHANGED TO BUILDING 132.**

**New specifications**: included in this amendment are two new specification sections: Section 13280A ASBESTOS HAZARD CONTROL ACTIVITIES
Section 13283N REMOVAL/CONTROL AND DISPOSAL OF PAINT WITH LEAD.

(End of Summary of Changes)

SECTION 13280A

ASBESTOS HAZARD CONTROL ACTIVITIES
**06/04**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

| | |
|---|---|
| ANSI Z87.1 | (2003) Practice for Occupational and Educational Eye and Face Protection |
| ANSI Z88.2 | (1992) Respiratory Protection |
| ANSI Z9.2 | (2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems |

ASTM INTERNATIONAL (ASTM)

| | |
|---|---|
| ASTM D 1331 | (1989; R 2001) Surface and Interfacial Tension of Solutions of Surface-Active Agents |
| ASTM D 4397 | (2002) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications |
| ASTM E 1368 | (2002) Visual Inspection of Asbestos Abatement Projects |

COMPRESSED GAS ASSOCIATION (CGA)

| | |
|---|---|
| CGA G-7 | (2003) Compressed Air for Human Respiration |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

| | |
|---|---|
| NFPA 701 | (1999) Fire Tests for Flame Propagation of Textiles and Films |

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

| | |
|---|---|
| NIOSH 94-113 | (1994; 4th Ed) NIOSH Manual of Analytical Methods |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2003) Safety -- Safety and Health Requirements |
| EP 1110-1-11 | Asbestos Abatement Guideline Detail Sheets |

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

| | |
|---|---|
| EPA 340/1-90/018 | (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance |

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

| | |
|---|---|
| 29 CFR 1910.134 | Respiratory Protection |
| 29 CFR 1910.141 | Sanitation |
| 29 CFR 1910.147 | Control of Hazardous Energy (Lock Out/Tag Out) |
| 29 CFR 1926.1101 | Asbestos |
| 29 CFR 1926.32 | Safety and Health Regulations for Construction - Definition |
| 40 CFR 61 | National Emission Standards for Hazardous Air Pollutants |
| 40 CFR 763 | Asbestos |
| 42 CFR 84 | Approval of Respiratory Protective Devices |
| 49 CFR 107 | Hazardous Materials Program Procedures |
| 49 CFR 171 | General Information, Regulations, and Definitions |
| 49 CFR 172 | Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements |
| 49 CFR 173 | Shippers - General Requirements for Shipments and Packagings |

UNDERWRITERS LABORATORIES (UL)

| | |
|---|---|
| UL 586 | (1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units |

1.2 DEFINITIONS

a. Amended Water: Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

b. Asbestos-Containing Material (ACM): Any materials containing more than one percent asbestos.

c. Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

d. Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building

Inspector" training; accreditation required by 40 CFR 763, Subpart E, Appendix C, has EPA/State certification/license as a "Building Inspector".

e. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.

f. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos - containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials which would fit into a glovebag may be classified as a Class III job.

g. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.

h. Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.

i. Clean room: An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

j. Competent Person: In addition to the definition in 29 CFR 1926.32 (f), a person who is capable of identifying existing asbestos hazards as defined in 29 CFR 1926.1101, selecting the appropriate control strategy, has the authority to take prompt corrective measures to eliminate them and has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training; has EPA/State certification/license as a "Contractor/Supervisor".

k. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; has EPA/State certification as a "Contractor/Supervisor".

l. Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.

m. Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with

asbestos.

n. Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

o. Disposal Bag: A 0.15 mm thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926.1101, used for transporting asbestos waste from containment to disposal site.

p. Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glovebag or waste bag, not larger than 1.5 m in length and width in order to access a building component.

q. Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.

r. Fiber: A fibrous particulate, 5 micrometers or longer, with a length to width ratio of at least 3 to 1.

s. Friable ACM: A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

t. Glovebag: Not more than a 1.5 by 1.5 m impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

u. High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

v. Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.

w. Model Accreditation Plan (MAP): USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763.

x. Negative Initial Exposure Assessment: A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).

y. NESHAP: National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61, Subpart M.

z. Nonfriable ACM: A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material containing more than 1

percent asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

aa. Nonfriable ACM (Category I): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.

bb. Nonfriable ACM (Category II): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos.

cc. Permissible Exposure Limits (PELs):

(1) PEL-Time weighted average(TWA): Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA).

(2) PEL-Excursion Limit: An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.

dd. Regulated Area: An OSHA term defined in 29 CFR 1926.1101 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.

ee. Removal: All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

ff. Repair: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates.

gg. Surfacing ACM: Asbestos-containing material which contains more than 1% asbestos and is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

hh. Thermal system insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.

ii. Transite: A generic name for asbestos cement wallboard and pipe.

jj. Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detailed Drawings

Descriptions, detailed drawings, and site layout to include worksite containment area(s), local exhaust systems locations, decontamination units and load-out units, other temporary waste storage facility, access tunnels, location of temporary utilities (electrical, water, sewer) and boundaries of each regulated area.

SD-03 Product Data

Asbestos Waste Shipment Records
Weight Bills and Delivery Tickets

Waste shipment records, weight bills and delivery tickets.

Encapsulants
Respiratory Protection Program
Cleanup and Disposal

Manufacturer's catalog data for all materials and equipment to be used, including brand name, model, capacity, performance characteristics and any other pertinent information. Test results and certificates from the manufacturer of encapsulants substantiating compliance with performance requirements of this specification. Material Safety Data Sheets for all chemicals to be used onsite in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM. Data shall include, but shall not be limited to, the following items:

a. High Efficiency Filtered Air (HEPA) local exhaust equipment

b. Vacuum cleaning equipment

c. Pressure differential monitor for HEPA local exhaust equipment

d. Air monitoring equipment

e. Respirators

f. Personal protective clothing and equipment

g. Glovebags. Written manufacturer's proof that glovebags will not break down under expected temperatures and conditions.

h. Duct Tape

i. Disposal Containers

j. Sheet Plastic

k. Wetting Agent

l. Strippable Coating

m. Prefabricated Decontamination Unit

n. Material Safety Data Sheets (for all chemicals proposed)

Qualifications; G, RO

A written report providing evidence of qualifications for personnel, facilities and equipment assigned to the work.

Training Program

A copy of the written project site-specific training material as indicated in 29 CFR 1926.1101 that will be used to train onsite employees.

Licenses, Permits and Notifications; G, RO

Licenses, permits, and notifications.

SD-06 Test Reports

Exposure Assessment and Air Monitoring; G, RO

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

Local Exhaust System

Pressure differential recordings.

SD-07 Certificates

Local Exhaust System

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

a. Vacuums.

b. Water filtration equipment.

c. Ventilation equipment.

d. Other equipment required to contain airborne asbestos fibers.

Encapsulants

Certificates stating that encapsulants meet the applicable specified performance requirements.

Medical Surveillance Requirements

Required medical certification and the Physician's written

opinion.

1.4 DESCRIPTION OF WORK

This section covers all operations in which asbestos-containing materials (ACM) are encountered. These procedures and equipment are required to protect workers and building occupants from airborne asbestos fibers and ACM dust and debris. Activities include OSHA Class I, Class II, Class III, and Class IV work operations. This section also includes containment, storage, transportation and disposal of the generated ACM wastes. The Contractor shall submit Detailed Drawings in accordance with EP 1110-1-11 and as specified in the Submittals paragraph. When the detail sheets are not attached to this specification, the Contractor can get them from the web at:
http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/esp1110-1-11/toc.htm

1.4.1 Unexpected Discovery of Asbestos

For any previously untested building components suspected to contain asbestos and located in areas impacted by the work, the Contractor shall notify the Contracting Officer (CO) who will have the option of ordering up to 10 bulk samples to be obtained at the Contractor's expense and delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)" and analyzed by PLM. If the asbestos content is less than 10 percent, as determined by a method other than point counting, the asbestos content shall be verified by point counting. Any additional components identified as ACM that have been approved by the CO for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE titled "changes". Sampling shall be conducted by personnel who have successfully completed the EPA Model Accreditation Plan (MAP) "Building Inspector" training course and is EPA/State certified/licensed as a "Building Inspector".

1.5 QUALIFICATIONS

1.5.1 Written Qualifications and Organization Report

The Contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's Project Supervisor, Designated Competent Person, supervisors and workers; Designated IH; independent testing laboratory; all subcontractors to be used including disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform asbestos abatement and support activities. The report shall include an organization chart showing the Contractor's staff organization chain of command and reporting relationship with all subcontractors. The report shall be signed by the Contractor, the Contractor's onsite project manager, Designated Competent Person, Designated IH, designated testing laboratory and the principals of all subcontractors to be used. The Contractor shall include the following statement in the report: "By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926.1101, 40 CFR 61, Subpart M, and the federal, state and local requirements for those asbestos abatement activities that they will be involved in."

1.5.2 Specific Requirements

The Contractor shall designate in writing, personnel meeting the following qualifications:

1.5.2.1 Asbestos Abatement Contractor

The Contractor shall be certified/licensed [by applicable state agencies] to perform asbestos-related activities.

1.5.2.2 Designated Competent Person

Evidence that the full-time Designated Competent Person is qualified in accordance with 29 CFR 1926.32 and 29 CFR 1926.1101, has EPA MAP "Contractor/Supervisor" training accreditation, has EPA/State certification/license as a "Contractor/Supervisor" and is experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite, etc. The Designated Competent Person shall be responsible for compliance with applicable federal, state and local requirements, the Contractor's Accident Prevention Plan (APP) and Asbestos Hazard Abatement Plan (AHAP). The Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training, State certification with the employee "Certificate of Worker Acknowledgment". The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements. The Designated Competent Person shall be onsite at all times during the conduct of this project.

1.5.2.3 Project and Other Supervisors

Evidence that the Project Supervisor and other supervisors have EPA MAP "Contractor/Supervisor" training accreditation. The Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training, EPA/State certification/license with the employee "Certificate of Worker Acknowledgment". The Contractor shall submit evidence that the Project Supervisor has a minimum of 2 years of on-the-job asbestos abatement experience relevant to project supervisor responsibilities and the other supervisors have a minimum of 1 year on-the-job asbestos abatement experience commensurate with the responsibilities they will have on this project.

1.5.2.4 Designated Industrial Hygienist

The Contractor shall provide the resume for the Industrial Hygienist (IH) selected to prepare the Contractor's AHAP, prepare and perform training, direct air monitoring and assist the Contractor's Competent Person in implementing and ensuring that safety and health requirements are complied with during the performance of all required work. The Designated IH shall be a person who is board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH), has EPA MAP "Contractor/Supervisor" training accreditation, [has

EPA/State certification/license], and has a minimum of 2 years of comprehensive experience in planning and overseeing asbestos abatement activities. The Contractor shall submit, the "Contractor/Supervisor" course completion certificate and the most recent certificate for required refresher training and EPA/State certification/license with the employee "Certificate of Worker Acknowledgment". The Designated IH shall be completely independent from the Contractor according to federal, state, or local regulations; that is, shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. A copy of the Designated IH's current valid ABIH certification shall be included. The Designated IH shall visit the site at least 2 times per week for the duration of asbestos activities and shall be available for emergencies. In addition, the Contractor shall submit resumes of additional IH's and industrial hygiene technicians (IHT) who will be assisting the Designated IH in performing onsite tasks. IHs and IHTs supporting the Designated IH shall have a minimum of 2 years of practical onsite asbestos abatement experience. The formal reporting relationship between the Designated IH and the support IHs and IHTs, the Designated Competent Person, and the Contractor shall be indicated.

1.5.2.5 Asbestos Abatement Workers

Asbestos abatement workers shall meet the requirements contained in 29 CFR 1926.1101, 40 CFR 61, Subpart M, and other applicable federal, state and local requirements. Worker training documentation shall be provided as required on the "Certificate of Workers Acknowledgment".

1.5.2.6 Worker Training and Certification of Worker Acknowledgment

Training documentation is required for each employee who will perform OSHA Class I, Class II, Class III, or Class IV asbestos abatement operations. Such documentation shall be submitted on a Contractor generated form titled "Certificate of Workers Acknowledgment", to be completed for each employee in the same format and containing the same information as the example certificate at the end of this section. Training course completion certificates (initial and most recent update refresher) required by the information checked on the form shall be attached.

1.5.2.7 Physician

The Contractor shall provide the resume of the physician who will or has performed the medical examinations and evaluations of the persons who will conduct the asbestos abatement work tasks. The physician shall be currently licensed by the state where the workers will be or have been examined, have expertise in pneumoconiosis and shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1926.1101. The physician shall be familiar with the site's hazards and the scope of this project.

1.5.2.8 Independent Testing Laboratory

The Contractor shall identify the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations. Written verification of the following criteria, signed by the testing laboratory principal and the Contractor, shall be submitted:

(1) Phase contrast microscopy (PCM): The laboratory is fully equipped and proficient in conducting PCM of airborne samples using the methods specified by 29 CFR 1926.1101, OSHA method ID-160, the most current version of NIOSH 94-113 Method 7400. The laboratory shall be currently judged proficient (classified as acceptable) in counting airborne asbestos samples by PCM by successful participation in each of the last 4 rounds in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program or by participating in the AIHA PAT Program, and being judged proficient in counting samples.

(2) Polarized light microscopy (PLM): The laboratory is fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts with demonstrated proficiency to conduct PLM analyses.

(3) Transmission electron microscopy (TEM): The laboratory is [fully equipped and proficient in conducting TEM analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for airborne sample analysis of asbestos by TEM; the laboratory will use analysts with demonstrated proficiency in conducting analysis for low asbestos concentration, enhanced analysis of floor tiles and bulk materials where multiple layers are present, using an improved EPA test method titled, "Method for the Determination of Asbestos in Bulk Building Materials".]

(4) PCM/TEM: The laboratory is fully equipped and each analyst is proficient in conducting PCM and TEM analysis of airborne samples using NIOSH 94-113 Method 7400 PCM and NIOSH 94-113 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.

1.5.2.9 Disposal Facility, Transporter

The Contractor shall provide written evidence that the landfill to be used is approved for asbestos disposal by the state and local regulatory agencies. Copies of signed agreements between the Contractor (including subcontractors and transporters) and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste shall be provided. The Contractor and transporters shall meet the DOT requirements of 49 CFR 171, 49 CFR 172, and 49 CFR 173 as well as registration requirements of 49 CFR 107 and other applicable state or local requirements. The disposal facility shall meet the requirements of 40 CFR 61, Sections .154 or .155, as required in 40 CFR 61 150(b), and other applicable state or local requirements.

1.5.3 Federal, State or Local Citations on Previous Projects

The Contractor and all subcontractors shall submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities (including projects, dates, and resolutions); a list of penalties incurred through non-compliance with asbestos project specifications, including liquidated damages, overruns in scheduled time limitations and resolutions;

and situations in which an asbestos-related contract has been terminated (including projects, dates, and reasons for terminations). If there are none, a negative declaration signed by an officer of the company shall be provided.

1.6 REGULATORY REQUIREMENTS

In addition to detailed requirements of this specification, work performed under this contract shall comply with EM 385-1-1, applicable federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of asbestos waste materials. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply. The following state and local laws, rules and regulations regarding demolition, removal, encapsulation, construction alteration, repair, maintenance, renovation, emergency cleanup, housekeeping, handling, storing, transporting and disposing of asbestos material apply: NY City - Title 15 - ASsbestos Control Program of theRules of the City of New York.

1.7 SAFETY AND HEALTH PROGRAM AND PLANS

The Contractor shall prepare a written comprehensive site-specific Accident Prevention Plan (APP) at least 30 days prior to the preconstruction conference. The APP shall be in accordance with the format and requirements in Appendix A of EM 385-1-1. The APP shall incorporate an Asbestos Hazard Abatement Plan (AHAP), and Activity Hazard Analyses (AHAs) as separate appendices into one site-specific document. The APP shall take into consideration all the individual asbestos abatement work tasks identified in Table 1. See Section 01525 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS for additional requirements.

1.7.1 Asbestos Hazard Abatement Plan Appendix

The AHAP shall include, but not be limited to, the following:

a. The personal protective equipment to be used;

b. The location and description of regulated areas including clean and dirty areas,access tunnels, and decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit);

c. Initial exposure assessment in accordance with 29 CFR 1926.1101;

d. Level of supervision;

e. Method of notification of other employers at the worksite;

f. Abatement method to include containment and control procedures;

g. Interface of trades;

h. Sequencing of asbestos related work;

i. Storage and disposal procedures and plan;

j. Type of wetting agent and asbestos encapsulant;

k. Location of local exhaust equipment;

l. Air monitoring methods (personal, environmental and clearance);

m. Bulk sampling and analytical methods (if required);

n. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber;

o. Fire and medical emergency response procedures;

p. The security procedures to be used for all regulated areas.

1.7.2 Activity Hazard Analyses Appendix

AHAs for each major phase of work, shall be submitted and updated during the project. The AHAs format shall be in accordance with Figure 1-1 of EM 385-1-1. The analysis shall define the activities to be performed for a major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the AHA has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the onsite Government representatives. The AHAs shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations.

1.8 PRECONSTRUCTION CONFERENCE

The Contractor and the Contractor's Designated Competent Person, Project Supervisor, and Designated IH shall meet with the Contracting Officer (CO) prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor's submitted APP to include the AHAP and AHAs appendices. Deficiencies in the APP will be discussed. Onsite work shall not begin until the APP has been accepted.

1.9 SECURITY

Twenty-four hour security guard shall be provided for each regulated area. A log book shall be kept documenting entry into and out of the regulated area. Entry into regulated areas shall only be by personnel authorized by the Contractor and the CO. Personnel authorized to enter regulated areas shall be trained, medically evaluated, and wear the required personal protective equipment.

1.10 MEDICAL SURVEILLANCE REQUIREMENTS

Medical surveillance requirements shall conform to 29 CFR 1926.1101. Asbestos workers shall be enrolled in a medical surveillance program that meets 29 CFR 1926.1101 (m) requirements and other pertinent state or local requirements. This requirement shall have been satisfied within the last 12 months.

1.11 TRAINING PROGRAM

Prior to commencement of work the Contractor's Designated IH and Competent Person shall instruct each worker about:

a. The hazards and health effects of the specific types of ACM to be abated; and

b. The content and requirements of the Contractor's APP to include the AHAP and AHAs and site-specific safety and health precautions.

1.12 RESPIRATORY PROTECTION PROGRAM

The Contractor's Designated IH shall establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926.1101, 29 CFR 1910.134, and ANSI Z88.2. The Contractor's Designated IH shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations.

1.12.1 Respiratory Fit Testing

The Contractor's Designated IH shall conduct a qualitative or quantitative fit test conforming to Appendix A of 29 CFR 1910.134 for each worker required to wear a respirator, and any authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test shall be performed prior to initially wearing a respirator and every 12 months thereafter. If physical changes develop that will affect the fit, a new fit test shall be performed. Functional fit checks shall be performed each time a respirator is put on and in accordance with the manufacturer's recommendation.

1.12.2 Respirator Selection and Use Requirements

The Contractor shall provide respirators, and ensure that they are used as required by 29 CFR 1926.1101 and in accordance with CGA G-7 and the manufacturer's recommendations. Respirators shall be approved by the National Institute for Occupational Safety and Health NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. For air-purifying respirators, the particulate filter shall be high-efficiency particulate air (HEPA)/(N-,R-,P-100). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type shall be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered.

1.13 LICENSES, PERMITS AND NOTIFICATIONS

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's asbestos abatement, transportation and disposal actions and timely notification furnished of such actions as required by federal, state, regional, and local authorities. The Contractor shall notify the state OSHA program and the CO in writing, at least 10 days prior to the commencement of work, in accordance with 40 CFR 61, Subpart M, and state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail, Return Receipt Requested. The Contractor shall furnish copies of the receipts to the CO, in writing, prior to the commencement of work. Local fire department shall be notified 3 days before fireproofing material is removed from a building and the notice shall specify whether or not the material contains asbestos. The Contractor is responsible for the associated fees/costs for licenses, permits, and notifications.

## 1.14 PERSONAL PROTECTIVE EQUIPMENT

Three complete sets of personal protective equipment shall be made available to the CO and authorized visitors for entry to the regulated area. The CO and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment and the Contractor shall ensure that it is worn properly. The Contractor's Designated IH and Designated Competent Person shall select and approve all the required personal protective clothing and equipment.

### 1.14.1 Respirators

Respirators shall be in accordance with paragraph RESPIRATORY PROTECTION PROGRAM.

### 1.14.2 Whole Body Protection

Personnel exposed to or having the potential to be exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes of work for which a required negative exposure assessment is not produced, shall be provided with whole body protection and such protection shall be worn properly. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the regulated area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the regulated area or be properly laundered in accordance with 29 CFR 1926.1101. The Contractor's Designated Competent Person, in consultation with the Designated IH, has the authority to take immediate action to upgrade or downgrade whole body protection when there is an immediate danger to the health and safety of the wearer.

#### 1.14.2.1 Coveralls

Disposable-impermeable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.

#### 1.14.2.2 Gloves

Gloves shall be provided to protect the hands where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.).

#### 1.14.2.3 Foot Coverings

Cloth socks shall be provided and worn next to the skin. Footwear, as required by OSHA and EM 385-1-1, that is appropriate for safety and health hazards in the area shall be worn. Reusable footwear removed from the regulated area shall be thoroughly decontaminated or disposed of as ACM waste.

#### 1.14.2.4 Head Covering

Hood type disposable head covering shall be provided. In addition, protective head gear (hard hats) shall be provided as required. Hard hats shall only be removed from the regulated area after being thoroughly decontaminated.

1.14.2.5 Protective Eye Wear

Eye protection shall be provided, when operations present a potential eye injury hazard, and shall meet the requirements of ANSI Z87.1.

1.15 HYGIENE FACILITIES AND PRACTICES

The Contractor shall establish a decontamination area for the decontamination of employees, material and equipment. The Contractor shall ensure that employees enter and exit the regulated area through the decontamination area.

1.15.1 3-Stage Decontamination Area

A temporary negative pressure decontamination unit that is adjacent and attached in a leak-tight manner to the regulated area shall be provided. The decontamination unit shall have an equipment room and a clean room separated by a shower that complies with 29 CFR 1910.141, unless the Contractor can demonstrate that such facilities are not feasible. Equipment and surfaces of containers filled with ACM shall be cleaned prior to removing them from the equipment room or area. Two separate lockers shall be provided for each asbestos worker, one in the equipment room and one in the clean room. The Contractor shall provide a minimum of 2 showers. Wastewater shall be collected and filtered to remove asbestos contamination. Filters and residue shall be disposed of as asbestos contaminated material. Filtered water shall be discharged to the sanitary sewer system. Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Proper housekeeping and hygiene requirements shall be maintained. Soap and towels shall be provided for showering, washing and drying. Any cloth towels provided shall be disposed of as ACM waste or shall be laundered in accordance with 29 CFR 1926.1101.

1.15.2 Load-Out Unit

A temporary load-out unit that is adjacent and connected to the regulated area. The load-out unit shall be attached in a leak-tight manner to each regulated area.

1.15.3 Single Stage Decontamination Area

A decontamination area shall be provided for Class I work involving less than 7.5 m or 0.9 square meters of TSI or surfacing ACM, and for Class II and Class III asbestos work operations where exposures exceed the PELs or where there is no negative exposure assessment. The equipment room or area shall be adjacent to the regulated area for the decontamination of employees, material, and their equipment which could be contaminated with asbestos. The area shall be covered by an impermeable drop cloth on the floor or horizontal working surface. The area must be of sufficient size to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.

1.15.4 Decontamination Area Exit Procedures

The Contractor shall ensure that the following procedures are followed:

a. Before leaving the regulated area, remove all gross contamination and debris from work clothing using a HEPA vacuum.

b. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers (see Detail Sheets 9A and 14) for disposal and/or laundering.

c. Employees shall not remove their respirators until showering.

d. Employees shall shower prior to entering the clean room. If a shower has not been located between the equipment room and the clean room or the work is performed outdoors, the Contractor shall ensure that employees engaged in Class I asbestos jobs: a) Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or b) Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.

1.15.5 Smoking

Smoking, if allowed by the Contractor, shall only be permitted in designated areas approved by the CO.

1.16 REGULATED AREAS

All Class I, II, and III asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Access to regulated areas shall be limited to authorized persons. The Contractor shall control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

1.17 WARNING SIGNS AND TAPE

Warning signs and tape printed in English shall be provided at the regulated boundaries and entrances to regulated areas. Signs shall be located to allow personnel to read the signs and take the necessary protective steps required before entering the area. Warning signs, as shown and described in DETAIL SHEET 11, and displaying the following legend in the lower panel:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
[RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA]

See DETAIL SHEET 11 and DETAIL SHEET 15.
Decontamination unit signage shall be as shown and described on DETAILED SHEET 15.

1.18 WARNING LABELS

Warning labels shall be affixed to all asbestos disposal containers, asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to

requirements are acceptable. See DETAIL SHEET 14,

1.19 LOCAL EXHAUST SYSTEM

Local exhaust units shall conform to ANSI Z9.2 and 29 CFR 1926.1101. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled.

1.20 TOOLS

Vacuums shall be equipped with HEPA filters, of sufficient capacity and necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system. Reusable tools shall be thoroughly decontaminated prior to being removed from regulated areas.

1.21 RENTAL EQUIPMENT

If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment.

1.22 AIR MONITORING EQUIPMENT

The Contractor's Designated IH shall approve air monitoring equipment. The equipment shall include, but shall not be limited to:

a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute.

b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.

c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands for personal air sampling.

[d. Single use standard 25 mm diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive cowl, and shrink bands when conducting environmental area sampling using NIOSH 94-113 Methods 7400 and 7402, (and the transmission electric microscopy method specified at 40 CFR 763 if required).]

e. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 20 to plus 60 degrees C and traceable to a NIST primary standard.

## 1.23 EXPENDABLE SUPPLIES

### 1.23.1 Glovebag

Glovebags shall be provided as described in 29 CFR 1926.1101 and SET-UP DETAIL SHEET 10. The glovebag assembly shall be 0.15 mm thick plastic, prefabricated and seamless at the bottom with preprinted OSHA warning label.

### 1.23.2 Duct Tape

Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container.

### 1.23.3 Disposal Containers

Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers shall be provided for ACM wastes as required by 29 CFR 1926.1101 and DETAIL SHEETS 9A, 9B, 9C and 14. Disposal containers can be in the form of:

a. Disposal Bags

b. Fiberboard Drums

c. Cardboard Boxes

### 1.23.4 Sheet Plastic

Sheet plastic shall be polyethylene of 0.15 mm minimum thickness and shall be provided in the largest sheet size necessary to minimize seams ,[as indicated on the project drawings]. Film shall be clear and conform to ASTM D 4397, except as specified below:

#### 1.23.4.1 Flame Resistant

Where a potential for fire exists, flame-resistant sheets shall be provided. Film shall be frosted and shall conform to the requirements of NFPA 701.

#### 1.23.4.2 Reinforced

Reinforced sheets shall be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

### 1.23.5 Mastic Removing Solvent

Mastic removing solvent shall be nonflammable and shall not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite shall have a flash point greater than 60 degrees C.

### 1.23.6 Leak-tight Wrapping

Two layers of 0.15 mm minimum thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and

other materials too large to be placed in disposal bags as described in DETAIL SHEET 9B. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.23.7 Viewing Inspection Window

Where feasible, a minimum of 1 clear, 3 mm thick, acrylic sheet, 450 by 610 mm , shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows shall be sealed leak-tight with industrial grade duct tape.

1.23.8 Wetting Agents

Amended water shall meet the requirements of ASTM D 1331. Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.23.9 Strippable Coating

Strippable coating in aerosol cans shall be used to adhere to surfaces and to be removed cleanly by stripping, at the completion of work.

PART 2 PRODUCTS

2.1 ENCAPSULANTS

Encapsulants shall conform to USEPA requirements, shall contain no toxic or hazardous substances and no solvent.

2.2 ENCASEMENT PRODUCTS

Encasement shall consist of primary cellular polymer coat, polymer finish coat, and any other finish coat as approved by the CO.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor shall use the engineering controls and work practices required in 29 CFR 1926.1101(g) in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment. The Contractor shall not permit eating, smoking, drinking, chewing or applying cosmetics in the regulated area. Personnel of other trades, shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions of the Contractor's APP are complied with. Power to the regulated area shall be locked-out and tagged in accordance with 29 CFR 1910.147, and temporary electrical service with ground fault circuit interrupters shall be provided as needed. Temporary electrical service shall be disconnected when necessary for wet removal. The Contractor shall stop abatement work in the regulated area immediately when the airborne total fiber concentration: (1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or (2) equals or exceeds 1.0 f/cc inside the regulated area. The Contractor shall

correct the condition to the satisfaction of the CO, including visual inspection and air sampling. Work shall resume only upon notification by the CO. Corrective actions shall be documented.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

Asbestos abatement shall be performed without damage to or contamination of adjacent work or area. Where such work or area is damaged or contaminated, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government. When spills occur, work shall stop in all effected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and air sampling analysis results are obtained and have been evaluated by the Contractor's Designated IH and the CO, work shall proceed.

3.3 OBJECTS

3.3.1 Removal of Mobile Objects

The Government will remove Furniture and equipment from the area of work before work begins. These objects shall be removed to an area or site designated on DETAIL SHEET 27 and as identified by the CO, and stored; or other appropriate action taken as identified on DETAIL SHEET 27. Carpets, draperies, and other items which may not be suitable for onsite wet cleaning methods shall be properly cleaned in accordance with 29 CFR 1926.1101

3.4 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

Building ventilation system supply and return air ducts in a regulated area shall be shut down and isolated by lockable switch or other positive means in accordance with 29 CFR 1910.147. The airtight seals shall consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement. Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape.

3.5 PRECLEANING

Surfaces shall be cleaned by HEPA vacuum and adequately wet wiped prior to establishment of containment.

3.6 METHODS OF COMPLIANCE

3.6.1 Mandated Practices

The specific abatement techniques and items identified shall be detailed in the Contractor's AHAP. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

a. Vacuum cleaners equipped with HEPA filters.

b. Wet methods or wetting agents except where it can be demonstrated that the use of wet methods is unfeasible due to the creation of electrical hazards, equipment malfunction, and in roofing.

c. Prompt clean-up and disposal.

d. Inspection and repair of polyethylene.

e. Cleaning of equipment and surfaces of containers prior to removing them from the equipment room or area.

3.6.2 Control Methods

The Contractor shall use the following control methods:

a. Local exhaust ventilation equipped with HEPA filter;

b. Enclosure or isolation of processes producing asbestos dust;

c. Where the feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce employee exposure to the lowest levels attainable and shall supplement them by the use of respiratory protection.

3.6.3 Unacceptable Practices

The following work practices shall not be used:

a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.

b. Compressed air used to remove asbestos containing materials, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

c. Dry sweeping, shoveling, or other dry clean up.

d. Employee rotation as a means of reducing employee exposure to asbestos.

3.6.4 Class I Work Procedures

In addition to requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

a. A Competent Person shall supervise the installation and operation of the control methods.

b. For jobs involving the removal of more than 7.5 m or 0.9 square m of TSI or surfacing material, the Contractor shall place critical barriers over all openings to the regulated area.

c. HVAC systems shall be isolated in the regulated area by sealing with a double layer of plastic or air-tight rigid covers.

d. Impermeable dropcloths (0.15 mm or greater thickness) shall be placed on surfaces beneath all removal activity.

e. Where a negative exposure assessment has not been provided or where exposure monitoring shows the PEL was exceeded, the regulated area shall be ventilated with a HEPA unit and employees must use PPE.

3.6.5 Specific Control Methods for Class I Work

3.6.5.1 Glovebag Systems

Glovebag systems shall be as shown in SETUP DETAIL SHEET 10. Glovebags shall be used without modification, smoke-tested for leaks, and completely cover the circumference of pipe or other structures where the work is to be done. Glovebags shall be used only once and shall not be moved. Glovebags shall not be used on surfaces that have temperatures exceeding 66 degrees C . Prior to disposal, glovebags shall be collapsed using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. At least 2 persons shall perform glovebag removal. Designated boundary limits for the asbestos work shall be established with rope or other continuous barriers and all other requirements for asbestos control areas shall be maintained, including area signage and boundary warning tape as specified in SET-UP DETAIL SHEET 11.

a. The Contractor shall attach HEPA vacuum systems to the bag to prevent collapse during removal of ACM.

b. The negative pressure glove boxes shall be fitted with gloved apertures and a bagging outlet and constructed with rigid sides from metal or other material which can withstand the weight of the ACM and water used during removal. A negative pressure shall be created in the system using a HEPA filtration system. The box shall be smoke tested for leaks prior to each use.

3.6.5.2 Mini-Enclosures

Single bulkhead containment or [Mini-containment (small walk-in enclosure) to accommodate no more than 2 persons, may be used if the disturbance or removal can be completely contained by the enclosure. The mini-enclosure shall be inspected for leaks and smoke tested before each use. Air movement shall be directed away from the employee's breathing zone within the mini-enclosure.

3.6.5.3 Wrap and Cut Operation

Prior to cutting pipe, the asbestos-containing insulation shall be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. The following steps shall be taken: install glovebag, strip back sections to be cut 150 mm from point of cut, and cut pipe into manageable sections.

3.6.6 Class II Work

In addition to the requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

a. A Competent Person shall supervise the work.

b. For indoor work, critical barriers shall be placed over all openings to the regulated area.

c. Impermeable dropcloths shall be placed on surfaces beneath all removal activity.

3.6.7 Specific Control Methods for Class II Work

3.6.7.1 Vinyl and Asphalt Flooring Materials

When removing vinyl and asphalt flooring materials from a building in which ACM has not been verified, tiles shall be removed intact (if possible); wetting is not required when tiles are heated and removed intact. Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. The Contractor shall use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors.

3.6.7.2 Roofing Material

When removing roofing materials which contain ACM as described in 29 CFR 1926.1101(g)(8)(ii), roofing material shall be removed in an intact state. Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards. When removing built-up roofs, with asbestos-containing roofing felts and an aggregate surface, using a power roof cutter, all dust resulting from the cutting operations shall be collected by a HEPA dust collector, or shall be HEPA vacuumed by vacuuming along the cut line. Asbestos-containing roofing material shall not be dropped or thrown to the ground, but shall be lowered to the ground via covered, dust-tight chute, crane, hoist or other method approved by the CO. Any ACM that is not intact shall be lowered to the ground as soon as practicable, but not later than the end of the work shift. While the material remains on the roof it shall be kept wet or placed in an impermeable waste bag or wrapped in plastic sheeting. Intact ACM shall be lowered to the ground as soon as practicable, but not later than the end of the work shift. Unwrapped material shall be transferred to a closed receptaclet. Critical barriers shall be placed over roof level heating and ventilation air intakes.

3.6.7.3 Cementitious Siding and Shingles or Transite Panels

When removing cementitious asbestos-containing siding, shingles or transite panels, each panel or shingle shall be sprayed with amended water prior to removal. Nails shall be cut with flat, sharp instruments. Unwrapped or unbagged panels or shingles shall be immediately lowered to the ground via covered dust-tight chute, crane or hoist, or placed in an impervious waste bag or wrapped in plastic sheeting and lowered to the ground no later than the end of the work shift.

3.6.7.4 Gaskets

Gaskets shall be thoroughly wetted with amended water prior to removal and immediately placed in a disposal container. If a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be undertaken within a glovebag. Any scraping to remove residue shall be performed wet.

3.6.8 Specific Control Methods for Class III Work

Class III asbestos work shall be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work. The work shall be performed using wet methods and, to the extent feasible, using local exhaust. The Contractor shall use impermeable

drop cloths and shall isolate the operation, using mini-enclosures or glovebag systems, where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of TSI or surfacing material.

3.6.9 Specific Control Methods for Class IV Work

Class IV jobs shall be conducted using wet methods and HEPA vacuums. Employees cleaning up debris and waste in a regulated area where respirators are required shall wear the selected respirators.

3.6.10 Methods for Asphaltic Wrap

Removal or disturbance of pipeline asphaltic wrap shall be performed using wet methods.

3.6.11 Class I Asbestos Work Response Action Detail Sheets

The following Class I Asbestos Work Response Action Detail Sheet is specified on Table 1 for each individual work task to be performed:

a. Troweled Wall Plaster on Masonry: See Sheet 32

b. Troweled Wall Plaster on Stud Wall: See Sheet 33

c. Troweled Ceiling Plaster on Structural Substrate: See Sheet 35

d. Troweled Ceiling Plaster on Hung Ceiling: See Sheet 36

e. Acoustical Wall Plaster on Masonry: See Sheet 42

f. Acoustical Ceiling Plaster (Non-Asbestos Substrate): See Sheet 44

g. Asbestos Decorative Paint on Plaster: See Sheet 46

h. Asbestos-contaminated Masonry for Masonry Chimney: See Sheet 50

i. Asbestos-contaminated Masonry Wall or Thermal Insulation: See Sheet 51

j. Fireproofing or Thermal Surface Insulation: See Sheet 68

k. Acoustical Ceiling Insulation: See Sheet 70

l. Exterior Asbestos Stucco: See Sheet 79

m. Duct Insulation: Air circulation is not permitted in ductwork while abatement work is in progress. See Sheet 101. The HVAC system shall be isolated or inoperative and locked out of service prior to removal of duct insulation. Air circulation is not permitted in ductwork during abatement work.

n. Pipe Insulation (Using a Glovebag): See Sheet 87

o. Horizontal Pipe Insulation (Using a Containment Area): See Sheet 88

p. Pipe Insulation (Using a Mini-Containment Area): See Sheet 89

q. Storage Tank and Boiler Breeching Insulation: See Sheet 93. Storage tanks and boilers shall be valved off an allowed a suffiecient amount of time to cool down prior to abatement work. Insulation shall be sprayed with a mist of amended water or removal encapsulant. Amended water or removal encapsulant shall be allowed to saturate material to substrate. Cover jackets shall be slit at seams, and sections removed and hand-placed in a polyethylene disposable bag. Exposed surfaces shall be continuously sprayed with amended water to minimize airborne dust. Insulation on tanks and boiler breeching shall not be allowed to drop to the floor. Lagging on piping and insulation on fittings shall be removed. A penetrating encapsulant shall be sprayed on all exposed tank, boiler and boiler breeching surfaces.

r. Troweled Wall Plaster on Studs: See Sheet 30

s. Troweled Ceiling or Wall Plaster on Masonry: See Sheet 31

t. Acoustical Ceiling on Wall Plaster: See Sheet 41

u. Interior Stucco: See Sheet 78

v. Exterior Stucco: See Sheet 80

w. Pipe and Fitting Insulation (using Glovebag): See Sheet 86

x. Storage Tank and Boiler Breeching: See Sheet 92

y. Duct Insulation: See Sheet 100.

3.6.12 Class II Asbestos Work Response Action Detail Sheets

The following Class II Asbestos Work Response Action Detail Sheet is specified on Table 1 for each individual work task to be performed:

a. Light Curtain: See Sheet 47

b. Interior Asbestos Cement, Fiberboard and Drywall Panels: See Sheet 48

c. Suspended Asbestos Cement Ceiling Tile: See Sheet 52

d. Asbestos Cement Architectural Products: See Sheet 53

e. Glued-on Acoustical Ceiling and Wall Tile: See Sheet 55

f. Suspended Acoustical Ceiling Tile: See Sheet 54

g. Vinyl or Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos-Containing Adhesive: See Sheet 56

h. Vinyl or Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos Containing Adhesive: See Sheet 60

i. Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos Containing Adhesive: See Sheet 57

j. Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos Free Adhesive: See Sheet 58

k. Vinyl Asbestos Tile and Chemical Dissolution of Asbestos-Containing Adhesives on Concrete Floor System: See Sheet 59

l. Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos-Containing Adhesive: See Sheet 61

m. Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos Free Adhesive: See Sheet 62

n. Sheet Flooring Adhered Wood Floor System: See Sheet 63

o. Asbestos-Containing Sheet Flooring Adhered to Concrete Floor System by Asbestos-Containing Adhesive: See Sheet 64

p. Carpeting (Asbestos-Containing or Contaminated): See Sheet 65

q. Miscellaneous Asbestos-Containing Materials: See Sheet 45

r. Built-Up Roofing and Flashing: See Sheet 74

s. Roof, Shingles and Underlayment: See Sheet 75

t. Asbestos Cement Siding: See Sheet 81

u. Asbestos Cement Roofing: See Sheet 82

v. Asbestos-Containing Walkway Cover: See Sheet 83

w. Asbestos-Contaminated Metal Siding: See Sheet 84

x. Asbestos Cement Sunscreen Louvers: See Sheet 85

y. Electrical Wiring and Fixtures: See Sheet 95

z. Asbestos Insulated Electrical Fixture: See Sheet 96

aa. Boiler Firebox Insulation: Firebox lining shall be removed from out-of-service boilers before the boiler is dismantled: See Sheet 97.

3.6.13 Enclosure of ACM

Isolation of ACM by construction of a permanent enclosure shall be conducted as specified in Title 15 CRCNY, 3.6.15. Enclosures shall be as follows:

a. Enclosure of Acoustical Wall Plaster on Masonry Wall: See Detail Sheet 37

b. Enclosure of Asbestos Contaminated Soil: See Detail Sheet 71

c. Enclosure of Acoustical Ceiling Plaster, Spray-on Fireproofing and Thermal Insulation Plaster: See Detail Sheet 43.

3.6.14 Encapsulation of ACM

Prior to applying any encapsulant, the entire surface area shall be

inspected for loose, or damaged asbestos material:

a. Penetrating Encapsulation: Before penetrating encapsulation is applied, asbestos removal work in the area shall be complete. Substrate shall be evaluated before application to ensure that the encapsulant will not cause the substrate to fail in any way. Plug samples shall be taken to determine if full penetration has been achieved. If full penetration has not been achieved, surfaces shall be recoated while the matrix is still wet, until full penetration is achieved: See Detail Sheet 39.

b. Bridging Encapsulation: The surface shall be encapsulated in sections of 93 square m or less as recommended by the encapsulant manufacturer. Upon completion of each section, the dry thickness of the bridging encapsulation shall be measured. Additional bridging encapsulant shall be applied to obtain the desired encapsulant thickness. Additional coats shall blend with the original bridging encapsulant. Bridging encapsulation shall include:

(1) Troweled Wall Plaster: See Detail Sheet 29
(2) Troweled Ceiling Plaster: See Detail Sheet 34
(3) Acoustical Wall Plaster: See Detail Sheet 38
(4) Acoustical Ceiling Plaster: See Detail Sheet 34
(5) Asbestos Cement Wall, Fiberboard and Drywall Panels: See Detail Sheet 49
(6) Exterior Asbestos Stucco: See Detail Sheet 76
(7) Interior Asbestos Stucco: See Detail Sheet 77
(8) Storage Tank and Boiler Breeching: See Detail Sheet 91
(9) Boiler and Piping Gasket: See Detail Sheet 98.

3.6.15 Combination Encapsulation of Acoustical Wall and Ceiling Plaster

The combination penetrating/bridging encapsulation system shall be installed by first applying the penetrating encapsulant and then the bridging encapsulant: See Detail Sheet 40.

3.6.16 Response Action Detail Sheets for Repair of Class I Materials

a. Troweled Wall Plaster on Studs: See Detail Sheet 30

b. Troweled Ceiling or Wall Plaster on Masonry: See Detail Sheet 31

c. Acoustical Ceiling on Wall Plaster: See Detail Sheet 41

d. Interior Stucco: See Detail Sheet 78

e. Exterior Stucco: See Detail Sheet 80

f. Pipe and Fitting Insulation (using Glovebag): See Detail Sheet 86

g. Storage Tank and Boiler Breeching: See Detail Sheet 92

h. Duct Insulation: See Detail Sheet 100

i. Exposed Pipe Insulation Edges: Asbestos insulation to remain shall have exposed edges contained. Wet and cut the rough ends true and square with sharp tools and then encapsulate the edges with a 6 mm thick layer of non-asbestos-containing insulating

cement troweled to a smooth finish; when cement is dry, lag the end with a layer of non-asbestos lagging cloth, overlapping the existing ends by 100 mm.

3.6.17 Response Action Detail Sheets for Repair of Class II Materials

a. Vinyl or Vinyl Asbestos Tile Adhered to Concrete Floor System by Asbestos-Containing Adhesive: See Detail Sheet 56

b. Vinyl or Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos Containing Adhesive: See Detail Sheet 60.

3.6.18 Encasement of ACM

Prior to applying the first layer of the polymer system, the structural stability of the ACM shall be verified. Encasement materials shall not be applied until all removal work within the regulated area has been completed and materials to be encased have been decontaminated. The asbestos substrate shall be completely encased. A polymer finish containing fiberglass shall be applied over the low density cellular foam to a thickness of 25 mm . All system components shall be applied according to the system manufacturer's instructions and data. Encasement shall be applied to:

a. Beams and Decking: See Detail Sheet 66

b. Columns: See Detail Sheet 67

c. Acoustical Ceiling Insulation: See Detail Sheet 69

d. Storage Tank and Boiler Breeching: See Detail Sheet 90.

3.6.19 Sealing Contaminated Items Designated for Disposal

Contaminated items designated for removal shall be coated with an asbestos lockdown encapsulant before being removed from the asbestos control area. The asbestos lockdown encapsulant shall be tinted a contrasting color and shall be spray applied by airless method. Thoroughness of sealing operation shall be visually gauged by the extent of colored coating on exposed surfaces.

3.7 FINAL CLEANING AND VISUAL INSPECTION

After completion of all asbestos removal work and the gross amounts of asbestos have been removed fromm every surface, any remaining visible accumulations of asbestos shall be collected. For all classes of indo0r asbestos abatement projects a final cleaning shall be performed using HEPA vacuum and wet cleaning of all exposed surfaces and objects in the regulated area. Upon completion of the cleaning, the Contractor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring. The Contractor and the CO shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection as specified on the SET-UP DETAIL SHEET 19. If the CO rejects the clean regulated area as not meeting final cleaning requirements, the Contractor shall reclean as necessary and have a follow-on inspection conducted with the CO. Recleaning and follow-up reinspection shall be at the Contractor's expense.

3.8 LOCKDOWN

Prior to removal of plastic barriers and after final visual inspection, a (lockdown) encapsulant shall be spray applied to ceiling, walls, floors, and other surfaces in the regulated area.

3.9 EXPOSURE ASSESSMENT AND AIR MONITORING

3.9.1 General Requirements

a. Exposure assessment, air monitoring and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 29 CFR 1926.1101, and the Contractor's air monitoring plan. Results of breathing zone samples shall be posted at the job site and made available to the CO.

b. Worker Exposure.

(1) The Contractor's Designated IH shall collect samples representative of the exposure of each employee who is assigned to work within a regulated area. Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated as shown in Table 2 at the end of this section.

(2) [[The Contractor shall] [The CO will] provide an onsite independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of air samples using the methods prescribed in 29 CFR 1926.1101, to include NIOSH 94-113 Method 7400.]

(3) The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the CO.

c. Environmental Exposure

(1) All environmental air monitoring shall be performed by the Contractor's Designated IH.

(2) Environmental and final clearance air monitoring shall be performed using NIOSH 94-113 Method 7400 (PCM) with optional confirmation of results by OSHA TEM.

(3) For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc.

(4) When confirming asbestos fiber concentrations (asbestos f/cc) from environmental and final clearance samples, use TEM in accordance with NIOSH 94-113 Method 7402. When such confirmation is conducted, it shall be from the same sample filter used for the

NIOSH 94-113 Method 7400 PCM analysis. All confirmation of asbestos fiber concentrations, using NIOSH 94-113 Method 7402, shall be at the Contractor's expense.

(5) Monitoring may be duplicated by the Government at the discretion of the CO and at the Government's expense.

(6) The Contractor shall maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the conduct of the asbestos abatement.

(7) At the discretion of the Contracting Officer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. Should an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the CO.

3.9.2 Initial Exposure Assessment

The Contractor's Designated IH shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements, which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job.

3.9.3 Negative Exposure Assessment

The Contractor shall provide a negative exposure assessment for the specific asbestos job which will be performed. The negative exposure assessment shall be provided within 10 days of the initiation of the project and conform to the following criteria:

a. Objective Data: Objective data demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL-Excursion Limit under those work conditions having the greatest potential for releasing asbestos.

b. Prior Asbestos Jobs: Where the Contractor has monitored prior asbestos jobs for the PEL and the PEL-Excursion Limit within 12 months of the current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; the data were obtained during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations; the

operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and these data show that under the conditions prevailing and which will prevail in the current workplace, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL-Excursion Limit.

c. Initial Exposure Monitoring: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

3.9.4 Independent Environmental Monitoring

The Contractor shall retain an independent air monitoring firm to perform during abatement and final clearance air monitoring] The air monitoring contractor has been provided a copy of the contract that includes this abatement work. The abatement contractor will provide the air monitoring contractor with an up-to-date copy of the accepted AHAP, APP and pertinent detailed drawings. The air monitoring contractor is required to comply with the abatement contractor's safety and health requirements. The abatement contractor will coordinate all onsite activities with the air monitoring contractor, the COR, and other affected parties as directed by the COR. The abatement contractor will provide the air monitoring contractor with an up-to-date schedule of abatement contractor work activities. The air monitoring contractor will coordinate with the abatement contractor and the COR during the performance Government required air monitoring. The abatement contractor is responsible for performing exposure assessment and personal air monitoring of abatement contractor's work. The air monitoring contractor is responsible for performing these tasks for its employee.

3.9.5 Preabatement Environmental Air Monitoring

Preabatement environmental air monitoring shall be established 2 day prior to the masking and sealing operations for each regulated area to determine background concentrations before abatement work begins. As a minimum, preabatement air samples shall be collected using NIOSH 94-113 Method 7400, PCM at these locations: outside the building; inside the building, but outside the regulated area perimeter; and inside each regulated work area. One sample shall be collected for every 185 square meters of floor space. At least 2 samples shall be collected outside the building: at the exhaust of the HEPA unit; and downwind from the abatement site. The PCM samples shall be analyzed within 24 hours; and if any result in fiber concentration greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH 94-113 Method 7402 (TEM).

3.9.6 Environmental Air Monitoring During Abatement

Until an exposure assessment is provided to the CO, environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in

concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; preabatement sampling locations; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area; inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the CO.

3.9.7 Final Clearance Air Monitoring

The Contractor's Designated IH shall conduct final clearance air monitoring using aggressive air sampling techniques as defined in 40 CFR 763, Subpart E, Appendix A, Unit III, TEM Method B.7(d-f) and Table 4 of this section for all indoor asbestos abatement projects. Clearance air monitoring is not required for outside work or for soil cleanups.

3.9.7.1 Final Clearance Requirements, NIOSH PCM Method

For PCM sampling and analysis using NIOSH 94-113 Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, shall be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 total f/cc, the asbestos fiber concentration (asbestos f/cc) shall be confirmed from that same filter using NIOSH 94-113 Method 7402 (TEM) at Contractor's expense. If any confirmation sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.9.7.2 Final Clearance Requirements, EPA TEM Method

For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, abatement inside the regulated area is considered complete when the arithmetic mean asbestos concentration of the 5 inside samples is less than or equal to 70 structures per square millimeter (70 S/mm). When the arithmetic mean is greater than 70 S/mm, the 3 blank samples shall be analyzed. If the 3 blank samples are greater than 70 S/mm, resampling shall be done. If less than 70 S/mm, the 5 outside samples shall be analyzed and a Z-test analysis performed. When the Z-test results are less than 1.65, the decontamination shall be considered complete. If the Z-test results are more than 1.65, the abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.9.7.3 Air Clearance Failure

If clearance sampling results fail to meet the final clearance requirements, the Contractor shall pay all costs associated with the required recleaning, resampling, and analysis, until final clearance requirements are met.

3.9.8 Air-Monitoring Results and Documentation

Air sample fiber counting shall be completed and results provided within 24 hours (breathing zone samples), and 24 hours clearance monitoring after completion of a sampling period. The CO shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The written results shall be signed by testing laboratory analyst, testing laboratory principal and the Contractor 's Designated IH. The air sampling results shall be documented on a Contractor's daily air monitoring log. The daily air monitoring log shall contain the following information for each sample:

a. Sampling and analytical method used;

b. Date sample collected;

c. Sample number;

d. Sample type: BZ = Breathing Zone (Personal), P = Preabatement, E = Environmental, C = Abatement Clearance;

e. Location/activity/name where sample collected;

f. Sampling pump manufacturer, model and serial number, beginning flow rate, end flow rate, average flow rate (L/min);

g. Calibration date, time, method, location, name of calibrator, signature;

h. Sample period (start time, stop time, elapsed time (minutes);

i. Total air volume sampled (liters);

j. Sample results (f/cc and S/mm square) if EPA methods are required for final clearance;

k. Laboratory name, location, analytical method, analyst, confidence level. In addition, the printed name and a signature and date block for the Industrial Hygienist who conducted the sampling and for the Industrial Hygienist who reviewed the daily air monitoring log verifying the accuracy of the information.

3.10 CLEARANCE CERTIFICATION

When asbestos abatement is complete, ACM waste is removed from the regulated areas, and final clean-up is completed, the CO will allow the warning signs and boundary warning tape to be removed. The CO will certify in writing that the area is safe before demolition is permitted. The Government will have the option to perform monitoring to certify the areas are safe before entry is permitted.

3.11 CLEANUP AND DISPOSAL

3.11.1 Title to ACM Materials

ACM material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified and in accordance with applicable federal, state and local

regulations.

3.11.2 Collection and Disposal of Asbestos

All ACM waste shall be collected including contaminated wastewater filters, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing and placed in leak-tight containers. Waste within the containers shall be wetted in case the container is breeched. Asbestos-containing waste shall be disposed of at a state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit in a manner acceptable to and in an area assigned by the CO. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, state, regional, and local standards.

3.11.3 Records and Management Plan

3.11.3.1 Asbestos Waste Shipment Records

The Contractor shall complete and provide the CO final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records, within 3 days of delivery to the landfill. Each Waste Shipment Record shall be signed and dated by the Contractor, the waste transporter and disposal facility operator.

3.11.3.2 Asbestos Management Plan

The Contractor shall provide a summary, in electronic form, of site activities (bulk samples, asbestos removed, repaired, encased, etc.) for updating the installation Asbestos Management Plan.

TABLE 1

INDIVIDUAL WORK TASK DATA ELEMENTS

Sheet_____ of _____

There is a separate data sheet for each individual work task.

1. WORK TASK DESIGNATION NUMBER _____
2. LOCATION OF WORK TASK_____
_____
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED:_____
_____

a. Type of Asbestos _____
b. Percent asbestos content _____%

4. ABATEMENT TECHNIQUE TO BE USED_____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK_____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable _____ Non-friable Category I _____
Non-friable Category II_____
7. FORM _____ and CONDITION OF ACM: GOOD_____ FAIR_____ POOR_____
8. QUANTITY: METERS_____, SQUARE METERS_____
8a. QUANTITY: LINEAR FT._____, SQUARE FT._____
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK_____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK _____, _____, _____, _____,
_____, _____, _____, _____.

NOTES:

(1) Numeric sequence of individual work tasks (1,2,3,4, etc.) for each regulated area. Each category of EPA friability/OSHA class has a separate task.
(2) Specific location of work (building, floor, area, e.g., Building 1421, 2nd Floor, Rm 201)
(3) A description of material to be abated (example: horizontal pipe, cement wall panels, tile, stucco, etc.) type of asbestos (chrysotile, amosite, crocidolite, etc.); and % asbestos content.
(4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
(5) Class designation: Class I, II, III, or IV (OSHA designation).
(6) Friability of materials: Check the applicable EPA NESHAP friability designation.
(7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
(8) Quantity of ACM for each work task in meters or square meters.
(8a) Quantity of ACM for each work task in linear feet or square feet.
(9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.
(10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet).

TABLE 2

FORMULA FOR CALCULATION OF THE 95 PERCENT CONFIDENCE LEVEL
(Reference: NIOSH 7400)

---

Fibers/cc(01.95 percent CL) = X + [(X) * (1.645) * (CV)]

Where: X = ((E)(AC))/((V)(1000))

E = ((F/Nf) - (B/Nb))/Af

CV = The precision value; 0.45 shall be used unless the analytical laboratory provides the Contracting Officer with documentation (Round Robin Program participation and results) that the laboratory's precision is better.

AC = Effective collection area of the filter in square millimeters

V = Air volume sampled in liters

E = Fiber density on the filter in fibers per square millimeter

F/Nf = Total fiber count per graticule field

B/Nb = Mean field blank count per graticule field

Af = Graticule field area in square millimeters

TWA = C1/T1 + C2/T2 = Cn/Tn

Where: C = Concentration of contaminant

T = Time sampled.

TABLE 3

NI0SH METHOD 7400

PCM ENVIRONMENTAL AIR SAMPLING PROTOCOL (NON-PERSONAL)

| Sample Location | Minimum No. of Samples | Filter Pore Size (Note 1) | Min. Vol. (Note 2) (Liters) | Sampling Rate (liters/min.) |
|---|---|---|---|---|
| Inside Abatement Area | 0.5/140 Square Meters (Notes 3 & 4) | 0.45 microns | 3850 | 2-16 |
| Each Room in 1 Abatement Area Less than 140 Square meters | | 0.45 microns | 3850 | 2-16 |
| Field Blank | 2 | 0.45 microns | 0 | 0 |
| Laboratory Blank | 1 | 0.45 microns | 0 | 0 |

Notes:

1. Type of filter is Mixed Cellulose Ester.

2. Ensure detection limit for PCM analysis is established at 0.005 fibers/cc.

3. One sample shall be added for each additional 140 square meters. (The corresponding I-P units are 5/1500 square feet).

4. A minimum of 5 samples are to be taken per abatement area, plus 2 field blanks.

TABLE 4

EPA AHERA METHOD: TEM AIR SAMPLING PROTOCOL

| Location Sampled | Minimum No. of Samples | Filter Pore Size | Min. Vol. (Liters) | Sampling Rate (liters/min.) |
|---|---|---|---|---|
| Inside Abatement Area | 5 | 0.45 microns | 1500 | 2-16 |
| Outside Abatement Area | 5 | 0.45 microns | 1500 | 2-16 |
| Field Blank | 2 | 0.45 microns | 0 | 0 |
| Laboratory Blank | 1 | 0.45 microns | 0 | 0 |

Notes:

1. Type of filter is Mixed Cellulose Ester.

2. The detection limit for TEM analysis is 70 structures/square mm.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____
CONTRACTOR FIRM NAME _____
EMPLOYEE'S NAME _____,_____,_____,
(Print) (Last) (First) (MI)

Social Security Number: _____-_____-_____, (Optional)

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that you be provided and you complete formal asbestos training specific to the type of work you will perform and project specific training; that you be supplied with proper personal protective equipment including a respirator, that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you. The Contractor's Designated Industrial Hygienist will check the block(s) for the type of formal training you have completed. Review the checked blocks prior to signing this certification.

FORMAL TRAINING:

_____ a. For Competent Persons and Supervisors: I have completed EPA's Model Accreditation Program (MAP) training course, "Contractor/Supervisor", that meets this State's requirements.

b. For Workers:

_____ (1) For OSHA Class I work: I have completed EPA's MAP training course, "Worker", that meets this State's requirements.

_____ (2) For OSHA Class II work (where there will be abatement of more than one type of Class II materials, i.e., roofing, siding, floor tile, etc.): I have completed EPA's MAP training course, "Worker", that meets this State's requirements.

(3) For OSHA Class II work (there will only be abatement of one type of Class II material):

_____ (a) I have completed an 8-hour training class on the elements of 29 CFR 1926.1101(k)(9)(viii), in addition to the specific work practices and engineering controls of 29 CFR 1926.1101(g) and hands-on training.

_____ (b) I have completed EPA's MAP training course, "Worker", that meets this State's requirements.

_____ (4) For OSHA Class III work: I have completed at least a 16-hour course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, Section .92(a)(2) and the elements of 29 CFR 1926.1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926.1101, and hands-on training.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

_____ (5) For OSHA Class IV work: I have completed at least a 2-hr course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, (a)(1), and the elements of 29 CFR 1926.1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926.1101(g) and hands-on training.

_____ c. Workers, Supervisors and the Designated Competent Person: I have completed annual refresher training as required by EPA's MAP that meets this State's requirements.

PROJECT SPECIFIC TRAINING:
_____ I have been provided and have completed the project specific training required by this Contract. My employer's Designated Industrial Hygienist and Designated Competent Person conducted the training.

RESPIRATORY PROTECTION:
_____ I have been trained in accordance with the criteria in the Contractor's Respiratory Protection program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair and contact lens use policy of my employer.

RESPIRATOR FIT-TEST TRAINING:
_____ I have been trained in the proper selection, fit, use, care, cleaning, maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time.

EPA/STATE CERTIFICATION/LICENSE

I have an EPA/OSHA certification/license as:
Building Inspector/Management Planner; Certification #_____
Contractor/Supervisor, Certification # _____
Project Designer, Certification # _____
Worker, Certification # _____

MEDICAL EXAMINATION:
_____ I have had a medical examination within the last twelve months which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made a determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's Industrial Hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

_____ were no limitations to performing the required work tasks.
_____ were identified physical limitations to performing the required work tasks.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

Date of the medical examination _____

Employee Signature _____ date _____

Contractor's Industrial Hygienist Signature _____ date _____

-- End of Section --

SECTION 13283N

REMOVAL/CONTROL AND DISPOSAL OF PAINT WITH LEAD
**02/02**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

| | |
|---|---|
| ANSI Z88.2 | (1992) Respiratory Protection |

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

| | |
|---|---|
| 29 CFR 1926.103 | Respiratory Protection |
| 29 CFR 1926.21 | Safety Training and Education |
| 29 CFR 1926.33 | Access to Employee Exposure and Medical Records |
| 29 CFR 1926.55 | Gases, Vapors, Fumes, Dusts, and Mists |
| 29 CFR 1926.59 | Hazard Communication |
| 29 CFR 1926.62 | Lead |
| 29 CFR 1926.65 | Hazardous Waste Operations and Emergency Response |
| 40 CFR 260 | Hazardous Waste Management System: General |
| 40 CFR 261 | Identification and Listing of Hazardous Waste |
| 40 CFR 262 | Standards Applicable to Generators of Hazardous Waste |
| 40 CFR 263 | Standards Applicable to Transporters of Hazardous Waste |
| 40 CFR 264 | Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| 40 CFR 265 | Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| 40 CFR 268 | Land Disposal Restrictions |
| 40 CFR 745 | Lead-Based Paint Poisoning Prevention in Certain Residential Structures |

| | |
|---|---|
| 49 CFR 172 | Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements |
| 49 CFR 178 | Specifications for Packagings |

UNDERWRITERS LABORATORIES (UL)

| | |
|---|---|
| UL 586 | (1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units |

1.2 DEFINITIONS

1.2.1 Abatement

As applied to target housing and child occupied facilities, "abatement" means any set of measures designed to permanently eliminate lead-based paint hazards in accordance with standards established by appropriate Federal agencies. Such term includes:

a. The removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead contaminated soil; and

b. All preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.

1.2.2 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8 hour period in a work environment.

1.2.3 Area Sampling

Sampling of lead concentrations within the lead control area and inside the physical boundaries, which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel.

1.2.4 Child Occupied Facility

A building or portion of a building constructed prior to 1978 visited regularly by the same child, 6 years of age or under, on a least two different days within any week, provided each days visit last at least 3 hours and the combined weekly visit last at least 6 hours and the combined annual visit last at least 60 hours. Child occupied facilities may include, but are not limited to day-care centers, preschools and kindergarten classrooms.

1.2.5 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations. A Certified Industrial Hygienist (CIH) certified for comprehensive practice by the American Board of Industrial Hygiene or a Certified Safety Professional (CSP) certified by

the Board of Certified Safety Professionals is the best choice.

1.2.6 Contaminated Room

Refers to a room for removal of contaminated personal protective equipment (PPE).

1.2.7 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

1.2.8 Deleading

Activities conducted by a person who offers to eliminate lead-based paint or lead-based paint hazards or to plan such activities in commercial buildings, bridges or other structures.

1.2.9 Eight-Hour Time Weighted Average (TWA)

Airborne concentration of lead to which an employee is exposed, averaged over an 8 hour workday as indicated in 29 CFR 1926.62.

1.2.10 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated paint dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron or larger size particles.

1.2.11 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps.

1.2.12 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight.

1.2.13 Lead-Based Paint Activities

In the case of target housing or child occupied facilities, lead-based paint activities include; a lead-based paint inspection, a risk assessment, or abatement of lead-based paint hazards.

1.2.14 Lead-Based Paint Hazard (LBP Hazard)

Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

1.2.15 Paint with Lead (PWL)

Any paint that contains lead as determined by the testing laboratory using a valid test method. The requirements of this section does not apply if no detectable levels of lead are found using a quantitative method for analyzing paint using laboratory instruments with specified limits of

detection (usually 0.01%). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

1.2.16 Lead Control Area

A system [of control methods] to prevent the spread of lead dust, paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.

1.2.17 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8 hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

PEL (micrograms/cubic meter of air) = 400/No. hrs worked per day

1.2.18 Personal Sampling

Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8 hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 150 to 225 mm and centered at the nose or mouth of an employee.

1.2.19 Physical Boundary

Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, "inside boundary" shall mean the same as "outside lead control area but inside the physical boundary."

1.2.20 Target Housing

Housing constructed prior to 1978. It does not include housing for the elderly, or persons with disabilities unless any one or more children age 6 years and younger resides or is expected to reside in such housing.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Vacuum Filters; G, RO

Respirators; G, RO

SD-06 Test Reports

sampling results; G, RO

Occupational and Environmental Assessment Data Report; G, RO

SD-07 Certificates

Qualifications of CP; G, RO

Testing Laboratory qualifications; G, RO

Occupant Notification; G, RO

Training Certification of workers and supervisors; G, RO

Notification of the Commencement of Hazard Abatement; G, RO

Third Party Consultant Qualifications; G, RO

Lead-based paint/paint with lead removal/control plan including CP approval (signature, date, and certification number); G, RO

Rental equipment notification; G, RO

Respiratory Protection Program; G, RO

Hazard Communication Program; G, RO

State approved hazardous waste treatment, storage, or disposal facility for lead disposal; G, RO

Lead Waste Management Plan; G, RO

Vacuum filters; G, RO

Clearance Certification; G, RO

SD-08 Manufacturer's Instructions

Chemicals and equipment; G, RO

Materials; G, RO

Material safety data sheets for all chemicals; G, RO

SD-11 Closeout Submittals

Completed and signed hazardous waste manifest from treatment or disposal facility; G, RO

Certification of Medical Examinations; G, RO

Employee Training Certification; G, RO

Waste turn-in documents or weight tickets for non-hazardous wastes that are disposed of at sanitary or construction and demolition landfills; G, RO

## 1.4 QUALITY ASSURANCE

### 1.4.1 Qualifications

#### 1.4.1.1 Qualifications of CP

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph entitled "Competent Person (CP) Responsibilities." Provide previous experience of the CP. Submit proper documentation that the CP is licensed or certified in accordance with Federal, State, and local laws.

#### 1.4.1.2 Training Certification

Submit a certificate for each employee and supervisor, signed and dated by the authorized training provider meeting 40 CFR 745 (Subpart L) requirements, stating that the employee or supervisor has received the required lead training and is certified to perform or supervise deleading or lead removal. Submit proof the work will be performed by a certified firm.

#### 1.4.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air, wipe, and soil sampling, testing, and reporting of airborne concentrations of lead. Use a laboratory accredited under the EPA National Lead Laboratory Accreditation Program (NLLAP) by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis shall be OSHA approved.

[1.4.1.4 Third Party Consultant Qualifications

Submit the name, address, and telephone number of the third party consultant selected to perform the wipe sampling for determining concentrations of lead in dust or soil sampling. Submit proper documentation that the consultant is trained and certified as an inspector technician or inspector/risk assessor by the USEPA authorized State (or local) certification and accreditation program.

]1.4.2 Requirements

#### 1.4.2.1 Competent Person (CP) Responsibilities

a. Verify training meets all federal, State, and local requirements.

b. Review and approve lead-based paint/paint with lead removal/control plan for conformance to the applicable standards. Ensure work is performed in strict accordance with specifications at all times.

c. Continuously inspect lead-based paint removal/control work for conformance with the approved plan.

d. Perform air and wipe sampling.

e. Control work to prevent hazardous exposure to human beings and to the environment at all times.

f. Certify the conditions of the work as called for elsewhere in this specification.

1.4.2.2 Lead-Based Paint/Paint with Lead Removal/Control Plan (LBP/PWL R/CP)

Submit a detailed job-specific plan of the work procedures to be used in the removal/control of LBP/PWL. The plan shall include a sketch showing the location, size, and details of lead control areas, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, controls and job responsibilities for each activity from which lead is emitted. Include in the plan, eating, drinking, smoking and sanitary procedures, interface of trades, sequencing of lead related work, collected waste water and paint debris disposal plan, air sampling plan, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead is not released outside the lead control area. Include site preparation, cleanup and clearance procedures. Include occupational and environmental sampling, training, sampling methodology, frequency, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multi-contractor worksites to inform affected employees and to clarify responsibilities to control exposures.

The Removal and Control Plan shall be developed by a certified planner/project designer.

1.4.2.3 Occupational and Environmental Assessment Data Report

If initial monitoring is necessary, submit occupational and environmental sampling results to the Contracting Officer within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

In order to reduce the full implementation of 29 CFR 1926.62, the Contractor shall provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62 and supporting the Lead Removal Plan.

a. The initial monitoring shall represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926.62. The data shall represent the worker's regular daily exposure to lead for stated work.

b. Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62 with a complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting and torch burning where lead containing coatings are present.

c. The initial assessment shall determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead compliance plan per 29 CFR 1926.62.

1.4.2.4 Medical Examinations

Initial medical surveillance as required by 29 CFR 1926.62 shall be made available to all employees exposed to lead at any time (1 day) above the action level. Full medical surveillance shall be made available to all employees on an annual basis who are or may be exposed to lead in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62. Adequate records shall show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62, and 29 CFR 1926.103. Maintain complete and accurate medical records of employees for a period of at least 30 years or for the duration of employment plus 30 years, whichever is longer.

1.4.2.5 Training

Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, and State and local regulations where appropriate.

1.4.2.6 Respiratory Protection Program

a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62.

b. Establish and implement a respiratory protection program as required by ANSI Z88.2, 29 CFR 1926.103, 29 CFR 1926.62, and 29 CFR 1926.55.

1.4.2.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.4.2.8 Lead Waste Management

The Lead Waste Management Plan shall comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

a. Identification and classification of hazardous wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.

c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of proof of State and local hazardous waste permits and Transporter Number.

d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.

g. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily. Proper containment of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers.

h. Unit cost for waste disposal according to this plan.

1.4.2.9 Environmental, Safety and Health Compliance

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of Federal, State, and local authorities regarding removing, handling, storing, transporting, and disposing of lead waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.62. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirement shall apply.

1.4.3 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the lead waste management plan and the lead-based paint/paint with lead removal/control plan, including work procedures and precautions for the removal plan.

1.5 EQUIPMENT

1.5.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust. Respirators shall comply with the requirements of 29 CFR 1926.62.

1.5.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper [disposable] [uncontaminated, reusable] protective whole body clothing, head covering, gloves, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

1.5.3 Rental Equipment Notification

If rental equipment is to be used during lead-based paint handling and disposal, notify the rental agency in writing concerning the intended use of the equipment. Furnish a copy of the written notification to the Contracting Officer.

1.5.4 Vacuum Filters

UL 586 labeled HEPA filters.

1.5.5 Equipment for Government Personnel

Furnish the Contracting Officer with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and

inspection of the paint removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, and hand protection. PPE shall remain the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.

1.6 PROJECT/SITE CONDITIONS

1.6.1 Protection of Existing Work to Remain

Perform paint removal work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better.

PART 2 PRODUCTS

Section 01525 SAFETY AND OCCUPATIONAL HEALTH REQUIRMENTS.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Protection

3.1.1.1 Notification

a. Notify the Contracting Officer 20 days prior to the start of any paint removal work.

b. Occupant Notification

Submit occupant written acknowledgment of the delivery of lead hazard information pamphlet (EPA 747-K-99-001 "Protect Your Family From Lead in Your Home") prior to commencing the renovation work for each affected unit per 40 CFR 745 Subpart E.

c. Notification of the Commencement of [LBP] Hazard Abatement

Submit a copy of the notification of the commencement of LBP hazard abatement to CO 20 days prior to starting any lead work.

3.1.1.2 Boundary Requirements

a. Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that lead will not escape outside the lead control area.

b. Warning Signs - Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

3.1.1.3 Furnishings

The Government will remove furniture and equipment from the building before lead-based paint removal work begins.

3.1.1.4 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas.

3.1.1.5 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.

3.1.1.6 Eye Wash Station

Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

3.2 APPLICATION

3.2.1 Work Procedures

Perform removal of lead-based paint in accordance with approved lead-based paint/paint with lead removal/control plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-based paint is removed in accordance with 29 CFR 1926.62. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), State, and local requirements.

3.3 DISPOSAL

3.3.1 Disposal

a. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing that may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62 and 40 CFR 262. Dispose of lead-contaminated waste material at a State approved hazardous waste treatment, storage, or disposal facility off Government property.

b. Place waste materials in U.S. Department of Transportation (49 CFR 178) approved 208 liter . Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. For hazardous waste, the collection drum requires marking/labeling in accordance with 40 CFR 262 during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for interim storage of waste-containing drums. Do not store hazardous waste drums in interim storage longer than 90 calendar days from the date affixed to each drum.

c. Handle, transport, and dispose lead or lead-contaminated material classified as hazardous waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

d. All material, whether hazardous or non-hazardous shall be disposed in accordance with laws and provisions and Federal, State, or local regulations. Ensure waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.

3.3.1.1 Disposal Documentation

Submit written evidence to demonstrate the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA, State or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Contractor shall provide a certificate that the waste was accepted by the disposal facility.

3.3.2 Payment for Hazardous Waste

Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials or non-hazardous waste delivered is returned and a copy is furnished to the Government.

-- End of Section --